EbV elektronik

MQTT





EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

Contents

1 Integrating the heatapp! and heatcon! system into home automation ---- 4

1.1 Available data points for reading/writing ---- 5

2 Quick start and prerequisites ---- 24

3 Modbus in heatapp! and heatcon! systems ---- 25

3.1 Enabling the Modbus connection ---- 25

3.2 Procedure ---- 25

3.3 Reading and writing data points ---- 26

3.4 Invalid queries ---- 27

4 MQTT in heatapp! and heatcon! Systems ---- 27

4.1 Procedure ---- 28

4.2 Security ---- 28

4.3 Allowing MQTT data exchange ---- 29

4.3.1 MQTT off ---- 29

4.3.2 MQTT using a local server ---- 29

4.3.3 MQTT using an external server (bridge) ---- 29

4.4 Authentication method ---- 30

4.4.1 No authentication ---- 31

4.4.2 Password ---- 31

4.4.3 Certificate ---- 31

4.4.4 Certificate validity ---- 31

4.5 MQTT topic prefix ---- 31

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

4.5.1 Structure of MQTT topics ---- 32

5 Home Assistant with heatapp! / heatcon! systems ---- 33

5.1 Home Assistant setup example ---- 33

5.2 Preparing heatapp!/heatcon! for Home Assistant ---- 33

5.3 Preparing Home Assistant ---- 33

5.4 Home Assistant – setup ---- 33

5.4.1 Option A: Broker in the heatcon! EC ---- 33

5.4.2 Option B: External broker ---- 34

5.5 Acceptance test ---- 35

6 Troubleshooting: symptom → check → action ---- 36

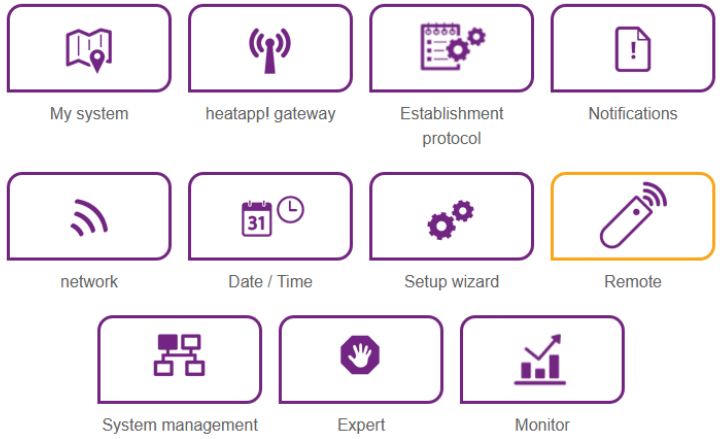
EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

1 Integrating the heatapp! and heatcon! system into home automation

From version 2.2.42898 onwards, heatapp! and heatcon! systems can be integrated into home automation. The interfaces used for this are Modbus or MQTT with Home Assistant.

To enable control via home automation, the relevant interface must be enabled in the System Administration menu. The following sections describe which data points can be read and written.
A new menu for remote access has been added to the system.



EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

1.1 Available data points for reading/writing

The following values can be read/written using Modbus / MQTT / Home Assistant:

Data value	Read/ Write	Format/displayed value	First Modbus Adresse	Modbus Function-Code	MQTT-Topic /<prefix>/	Homeassistant Name	Available		
							heatapp! base	heatapp! base	heatcon! EC
Outdoor temperature 1	Read only	Temperature in °C / °F	30001	Input register	outdoor/sensor_1/temperature	Outdoor temperature 1	X *	X	X
OT 1 average	Read only	Temperature in °C / °F	30004	Input register	outdoor/sensor_1/temperature_avg	Outdoor temperature 1 average		X	X
OT 1 long-term average	Read only	Temperature in °C / °F	30005	Input register	outdoor/sensor_1/temperature_ltavg	Outdoor temperature 1 long-term average		X	X
Outdoor temperature 2	Read only	Temperature in °C / °F	30002	Input register	outdoor/sensor_2/temperature	Outdoor temperature 2			X
OT2 average	Read only	Temperature in °C / °F	30014	Input register	outdoor/sensor_2/temperature_avg	Outdoor temperature 2 average		X	X
OT2 long-term average	Read only	Temperature in °C / °F	30015	Input register	outdoor/sensor_2/temperature_ltavg	Outdoor temperature 2 long-term average		X	X
$\frac{\text{OT1 + OT2}}{2}$	Read only	Temperature in °C / °F	30021	Input register	outdoor/sensor_virt/temperatur	OT1 + OT2 average		X	X
$\frac{\text{OT1 average + OT2 average}}{2}$	Read only	Temperature in °C / °F	30024	Input register	outdoor/sensor_virt/temperature_avg	OT1 avg + OT2 avg average		X	X
$\frac{\text{OT1 longterm + OT2 longterm}}{2}$	Read only	Temperature in °C / °F	30025	Input register	outdoor/sensor_virt/temperature_ltavg	OT1 longterm + OT2 longterm average		X	X
Room temperature Room 1 Room 2 Room 3 Room 4 Room 5 Room 6 Room 7 Room 8	Read only	Temperature in °C / °F	 31102 31202 31302 31402 31502 31602 31702 31802	Input register	zone_(n)/temperature	Room temperature	X	X	X

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

Data value	Read/ Write	Format/displayed value	First Modbus Adresse	Modbus Function-Code	MQTT-Topic /<prefix>/	Homeassistant Name	Available		
							heatapp! base	heatapp! base	heatcon! EC
Room 9			31902						
Room 10			32002						
Room 11			32102						
Room 12			32202						
Room 13			32302						
Room 14			32402						
Room 15			32502						
Room 16			32602						
Room 17			32702						
Room 18			32802						
Room 19			32902						
Room 20			33002						
Room 21			33102						
Room 22			33202						
Room 23			33302						
Room 24			33402						
Room setpoint	Read/ write	Temperature in °C / °F		Holding register	zone_(n)/setpoint	Room setpoint	X	X	X
Room 1			41101						
Room 2			41201						
Room 3			41301						
Room 4			41401						
Room 5			41501						
Room 6			41601						
Room 7			41701						
Room 8			41801						
Room 9			41901						
Room 10			42001						
Room 11			42101						
Room 12			42201						
Room 13			42301						

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

Data value	Read/ Write	Format/displayed value	First Modbus Adresse	Modbus Function-Code	MQTT-Topic /<prefix>/	Homeassistant Name	Available		
							heatapp! base	heatapp! base	heatcon! EC
Room 14			42401						
Room 15			42501						
Room 16			42601						
Room 17			42701						
Room 18			42801						
Room 19			42901						
Room 20			43001						
Room 21			43101						
Room 22			43201						
Room 23			43301						
Room 24			43401						
Room information Status symbol Room 1 Room 2 Room 3 Room 4 Room 5 Room 6 Room 7 Room 8 Room 9 Room 10 Room 11 Room 12 Room 13 Room 14 Room 15 Room 16	Read only	With an energy generator, no heat request (1-18) Without energy generator (121-138) 1, 121  2, 122  3, 123  4, 124 Day 5, 125 Night 6, 126  7, 127  8, 128  10, 130  11, 131  12, 132 	31109 31209 31309 31409 31509 31609 31709 31809 31909 32009 32109 32209 32309 32409 32509 32609 32709	Input register	zone_(n)1/status/state	Status room		X	X

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

Data value	Read/ Write	Format/displayed value		First Modbus Adresse	Modbus Function-Code	MQTT-Topic /<prefix>/	Homeassistant Name	Available		
								heatapp! base	heatapp! base	heatcon! EC
Room 17 Room 18 Room 19 Room 20 Room 21 Room 22 Room 23 Room 24		13,133	Cooling mode	32809 32909 33009 33109 33209 33309 33409						
		14,134								
		15, 135								
		16, 136	Tariff charge							
		17, 137								
		18, 138								
		With energy generator with heating request								
		41								
		42								
		43								
		44	Day							
		45	Night							
		46								
		47								
		48								
		50								
		51								
		52								

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

Data value	Read/ Write	Format/displayed value		First Modbus Adresse	Modbus Function-Code	MQTT-Topic /<prefix>/	Homeassistant Name	Available		
								heatapp! base	heatapp! base	heatcon! EC
		53	Colling mode							
		54								
		55								
		56	Tariff charge							
		57								
		58								
		With energy generator with cooling request								
		81								
		82								
		83								
		84	Day							
		85	Night							
		86								
		87								
		88								
		90								
		91								
		92								

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

Data value	Read/ Write	Format/displayed value		First Modbus Adresse	Modbus Function-Code	MQTT-Topic /<prefix>/	Homeassistant Name	Available		
								heatapp! base	heatapp! base	heatcon! EC
		93	Cooling mode							
		94								
		95								
		96	Tariff charge							
		97								
		98								
Room information Request Room 1 Room 2 Room 3 Room 4 Room 5 Room 6 Room 7 Room 8 Room 9 Room 10 Room 11 Room 12 Room 13 Room 14 Room 15 Room 16	Read only	Sensor		31116 31216 31316 31416 31516 31616 31716 31816 31916 32016 32116 32216 32316 32416 32516 32616	Input register	zone_(n)/request	Heating request			X

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

Data value	Read/ Write	Format/displayed value	First Modbus Adresse	Modbus Function-Code	MQTT-Topic /<prefix>/	Homeassistant Name	Available		
							heatapp! base	heatapp! base	heatcon! EC
Room 17 Room 18 Room 19 Room 20 Room 21 Room 22 Room 23 Room 24			32716 32816 32916 33016 33116 33216 33316 33416						
Room information Window contact Room 1 Room 2 Room 3 Room 4 Room 5 Room 6 Room 7 Room 8 Room 9 Room 10 Room 11 Room 12 Room 13 Room 14 Room 15 Room 16 Room 17 Room 18 Room 19 Room 20	Read only	0 = no window contact available 1 = Window contact close 2 = Window contact open	31117 31217 31317 31417 31517 31617 31717 31817 31917 32017 32117 32217 32317 32417 32517 32617 32717 32817 32917 33017 33117	Input register	zone_(n)/window_contact	Window contact		X	X

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

Data value	Read/ Write	Format/displayed value	First Modbus Adresse	Modbus Function-Code	MQTT-Topic /<prefix>/	Homeassistant Name	Available		
							heatapp! base	heatapp! base	heatcon! EC
Room 21 Room 22 Room 23 Room 24			33217 33317 33417						
Room information Battery level Room sensor Room 1 Room 2 Room 3 Room 4 Room 5 Room 6 Room 7 Room 8 Room 9 Room 10 Room 11 Room 12 Room 13 Room 14 Room 15 Room 16 Room 17 Room 18 Room 19 Room 20 Room 21 Room 22 Room 23 Room 24	Read only	%	 31110 31210 31310 31410 31510 31610 31710 31810 31910 32010 32110 32210 32310 32410 32510 32610 32710 32810 32910 33010 33110 33210 33310 33410	Input register	zone_(n)/wireless/room_sensor /battery	Sensor battery		X	X

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

Data value	Read/ Write	Format/displayed value	First Modbus Adresse	Modbus Function-Code	MQTT-Topic /<prefix>/	Homeassistant Name	Available		
							heatapp! base	heatapp! base	heatcon! EC
Room information Battery level valve 1 Room 1 Room 2 Room 3 Room 4 Room 5 Room 6 Room 7 Room 8 Room 9 Room 10 Room 11 Room 12 Room 13 Room 14 Room 15 Room 16 Room 17 Room 18 Room 19 Room 20 Room 21 Room 22 Room 23 Room 24	Read only	%	 31111 31211 31311 31411 31511 31611 31711 31811 31911 32011 32111 32211 32311 32411 32511 32611 32711 32811 32911 33011 33111 33211 33311 33411	Input register	zone_(n)/wireless/device_1/battery	Battery valve 1		X	X
Room information Battery level valve 2 Room 1 Room 2	Read only	%	 31112 31212	Input register	zone_(n)/wireless/device_2/battery	Battery valve 2		X	X

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

Data value	Read/ Write	Format/displayed value	First Modbus Adresse	Modbus Function-Code	MQTT-Topic /<prefix>/	Homeassistant Name	Available		
							heatapp! base	heatapp! base	heatcon! EC
Room 3			31312						
Room 4			31412						
Room 5			31512						
Room 6			31612						
Room 7			31712						
Room 8			31812						
Room 9			31912						
Room 10			32012						
Room 11			32112						
Room 12			32212						
Room 13			32312						
Room 14			32412						
Room 15			32512						
Room 16			32612						
Room 17			32712						
Room 18			32812						
Room 19			32912						
Room 20			33012						
Room 21			33112						
Room 22			33212						
Room 23			33312						
Room 24			33412						
Room information Battery level valve 3	Read only	%		Input register	zone_(n)/wireless/device_3/battery	Battery valve 3		X	X
Room 1			31113						
Room 2			31213						
Room 3			31313						
Room 4			31413						
Room 5			31513						
Room 6			31613						

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

Data value	Read/ Write	Format/displayed value	First Modbus Adresse	Modbus Function-Code	MQTT-Topic /<prefix>/	Homeassistant Name	Available		
							heatapp! base	heatapp! base	heatcon! EC
Room 7 Room 8 Room 9 Room 10 Room 11 Room 12 Room 13 Room 14 Room 15 Room 16 Room 17 Room 18 Room 19 Room 20 Room 21 Room 22 Room 23 Room 24			31713 31813 31913 32013 32113 32213 32313 32413 32513 32613 32713 32813 32913 33013 33113 33213 33313 33413						
Room information Battery level valve 4 Room 1 Room 2 Room 3 Room 4 Room 5 Room 6 Room 7 Room 8 Room 9 Room 10	Read only	%	 31114 31214 31314 31414 31514 31614 31714 31814 31914 32014	Input register	zone_(n)/wireless/device_4/battery	Battery valve 4		X	X

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

Data value	Read/ Write	Format/displayed value	First Modbus Adresse	Modbus Function-Code	MQTT-Topic /<prefix>/	Homeassistant Name	Available		
							heatapp! base	heatapp! base	heatcon! EC
Room 11 Room 12 Room 13 Room 14 Room 15 Room 16 Room 17 Room 18 Room 19 Room 20 Room 21 Room 22 Room 23 Room 24			32114 32214 32314 32414 32514 32614 32714 32814 32914 33014 33114 33214 33314 33414						
Heating circuit Actual temperature (Vorlauf) HK1 HK2 HK3 HK4 HK5 HK6 HK7 HK8 HK9 HK10 HK11 HK12 HK13 HK15	Read only	Temperature in °C/°F	 31105 31205 31305 31405 31505 31605 31705 31805 31905 32005 32105 32205 32305 32405	Input register	heating_circuit_(n)/forward_flow/temperature	Heating circuit flow temperature			X

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

Data value	Read/ Write	Format/displayed value	First Modbus Adresse	Modbus Function-Code	MQTT-Topic /<prefix>/	Homeassistant Name	Available		
							heatapp! base	heatapp! base	heatcon! EC
HK15			32505						
Heating circuit setpoint temperature HK1 HK2 HK3 HK4 HK5 HK6 HK7 HK8 HK9 HK10 HK11 HK12 HK13 HK15 HK15	Read only	Temperature in °C/°F	 31104 31204 31304 31404 31504 31604 31704 31804 31904 32004 32104 32204 32304 32404 32504	Input register	heating_circuit_(n)/forward_flow/setpoint	Heating circuit setpoint			X
Heating circuit Status HK1 HK2 HK3 HK4 HK5 HK6 HK7 HK8 HK9 HK10 HK11	Read only	0 = INACTIVE 1 = OFF 2 = ON	 31107 31207 31307 31407 31507 31607 31707 31807 31907 32007 32107	Input register	heating_circuit_(n)/status	Heating circuit			X

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

Data value	Read/ Write	Format/displayed value	First Modbus Adresse	Modbus Function-Code	MQTT-Topic /<prefix>/	Homeassistant Name	Available		
							heatapp! base	heatapp! base	heatcon! EC
HK12 HK13 HK15 HK15			32207 32307 32407 32507						
Heating circuit thermal output HK1 HK2 HK3 HK4 HK5 HK6 HK7 HK8 HK9 HK10 HK11 HK12 HK13 HK15 HK15	Read only	Power in watts	 31108 31208 31308 31408 31508 31608 31708 31808 31908 32008 32108 32208 32308 32408 32508	Input register	heating_circuit_(n)/heat_output	Heating circuit output			X
Heating buffer setpoint temperature	Read only	Temperature in °C/°F	33400	Input register	heating_buffer/setpoint	Heating buffer setpoint			X
Heating buffer PF 1	Read only	Temperature in °C/°F	33401	Input register	heating_buffer/temperature_1	Heating buffer temperature PF1			X
Heating buffer PF 2	Read only	Temperature in °C/°F	35013	Input register	heating_buffer/temperature_2	Heating buffer temperature PF2			X
Heating buffer Status	Read only	0 = INACTIVE 1 = OFF	33403	Input register	heating_buffer/status	Heating buffer			X

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

Data value	Read/ Write	Format/displayed value	First Modbus Adresse	Modbus Function-Code	MQTT-Topic /<prefix>/	Homeassistant Name	Available		
							heatapp! base	heatapp! base	heatcon! EC
		2 = ON							
DHW Setpoint temperature	Read only	Temperature in °C/°F	35022	Input register	water_heater/setpoint	DHW setpoint		X	X
DHW-Setpoint temperature day	Read/ write	Temperature in °C/°F	42603	Holding register	water_heater/day/setpoint	DHW day	X *	X	X
DHW-Setpoint temperature night	Read/ write	Temperature in °C/°F	42602	Holding register	water_heater/night/setpoint	DHW night	X *	X	X
DHW Sensor 1	Read only	Temperature in °C/°F	35020	Input register	water_heater/temperature	DHW temperature 1	X *	X	X
DHW Sensor 2	Read only	Temperature in °C/°F	35021	Input register	water_heater/temperature_2	DHW temperature 2			X
DHW Storage charging pump Status	Read only	0 = INACTIVE 1 = OFF 2 = ON	35023	Input register	water_heater/storage_charging_pump/status	DHW charging pump		X	X
DHW circulations pump Status	Read only	0 = INACTIVE 1 = OFF 2 = ON	35024	Input register	water_heater/circulation_pump/status	DHW circulation pump			X
DHW circulation pump S1	Read only	Temperature in °C/°F	35025	Input register	water_heater/circulation_pump/sensor_1	DHW circulation pump sensor 1			X
DHW circulation pump S2	Read only	Temperature in °C/°F	35026	Input register	water_heater/circulation_pump/sensor_2	DHW circulation pump sensor 2			X
DHW Thermal output	Read only	Power in watts	35027	Input register	water_heater/heat_output	DHW Thermal output			X
EEZ 1-Actual temperature WF1	Read only	Temperature in °C/°F	33104	Input register	boiler/forward_flow/temperature	GEN sensor 1	X *	X	X
EEZ 1 Actual temperature WF2	Read only	Temperature in °C/°F	35012	Input register	boiler/return_flow/temperature	GEN sensor 2			X
EEZ 1-return temperature	Read only	Temperature in °C/°F	33105	Input register	return/temperature	Return temperature	X *		X

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

Data value	Read/ Write	Format/displayed value	First Modbus Adresse	Modbus Function-Code	MQTT-Topic /<prefix>/	Homeassistant Name	Available		
							heatapp! base	heatapp! base	heatcon! EC
EEZ 1 Setpoint temperature	Read only	Temperature in °C/°F	33101	Input register	boiler/setpoint	GEN setpoint		X	X
EEZ 1 Set output	Read only	Power in watts	33106	Input register	boiler/heat_output_setpoint	GEN setpoint heat output			X
EEZ 1 actual output	Read only	Power in watts	33103	Input register	boiler/heat_output	GEN actual heat output			X
EEZ 1 Exhaust temperatur	Read only	Temperature in °C/°F	33107	Input register	boiler/exhaust_temperature	GEN exhaust temperature			X
EEZ 1 Status	Read only	0 = INACTIVE 1 = OFF 2 = ON	33100	Input register	boiler/status	GEN status		X	X
EEZ 1 Warning	Read only		33122	Input register	boiler/warning	GEN warning			X
EEZ 1 Blocking	Read only		33123	Input register	boiler/blocking_message	GEN blocking			X
Heat quantity	Read only	Display of the total heat quantity in kWh	35001	Input register	boiler/heat_meter	GEN heat quantity			X
Thermal output	Read only	Power in watts	33121	Input register	boiler/heat_output_total	GEN thermal output			X
DHW diverter valve UWW Status	Read only	0 = INACTIVE 1 = OFF 2 = ON	35028	Input register	boiler/domestic_hot_water_diverter/status	DHW diverter valve			X
Parallel GEN authorisation PWF	Read only	0 = INACTIVE 1 = OFF 2 = ON	33108	Input register	boiler/parallel_heat_generator_enable/status	Parallel heat generator release			X
Primary pump PP Status	Read only	0 = INACTIVE 1 = OFF 2 = ON	35000	Input register	boiler/primary_pump/status	Primary pump			X

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

Data value	Read/ Write	Format/displayed value	First Modbus Adresse	Modbus Function-Code	MQTT-Topic /<prefix>/	Homeassistant Name	Available		
							heatapp! base	heatapp! base	heatcon! EC
Return Setpoint temperature	Read only	Temperature in °C/°F	35002	Input register	return/setpoint	Return temperature setpoint			X
Return temperature	Read only	Temperature in °C/°F	33105	Input register	return/temperature	Return temperature			X
Rücklauf Status	Read only	0 = INACTIVE 1 = OFF 2 = ON	35003	Input register	return/status	Return			X
Total flow Setpoint temperature	Read only	Temperature in °C/°F	35004	Input register	supply/setpoint	Total flow setpoint			X
Total flow Actual temperature	Read only	Temperature in °C/°F	35005	Input register	supply/temperature	Total flow temperature			X
Total flow Status	Read only	0 = INACTIVE 1 = OFF 2 = ON	35006	Input register	supply/status	Total flow			X
Feed pump Setpoint temperature	Read only	Temperature in °C/°F	35007	Input register	transfer_pump/setpoint	Feed pump setpoint			X
Feed pump Actual temperature	Read only	Temperature in °C/°F	35008	Input register	transfer_pump/temperature	Feed pump temperature			X
Feed pump Status	Read only	0 = INACTIVE 1 = OFF 2 = ON	33119	Input register	transfer_pump/status	Feed pump status			X
Feed pump Thermal output	Read only	Power in watts	33120	Input register	transfer_pump/heat_output	Feed pump heat output			X
Difference Sensor 1 (VF) Diff 1 Diff 2 Diff 3 Diff 4 Diff 5	Read only	Temperature in °C/°F	 33501 33502 33503 33504 33505	Input register	differential_controller_(n)/temperature_1	Difference Sensor 1			X

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

Data value	Read/ Write	Format/displayed value	First Modbus Adresse	Modbus Function-Code	MQTT-Topic /<prefix>/	Homeassistant Name	Available		
							heatapp! base	heatapp! base	heatcon! EC
Diff 6 Diff 7 Diff 8 Diff 9 Diff 10 Diff 11 Diff 12 Diff 13 Diff 14 Diff 15			33506 33507 33508 33509 33510 33511 33512 33513 33514 33515						
Difference Sensor 2 (PF) Diff 1 Diff 2 Diff 3 Diff 4 Diff 5 Diff 6 Diff 7 Diff 8 Diff 9 Diff 10 Diff 11 Diff 12 Diff 13 Diff 14 Diff 15	Read only	Temperature in °C/°F	 33516 33517 33518 33519 33520 33521 33522 33523 33524 33525 33526 33527 33528 33529 33530	Input register	differential_controller_(n)/temperature_2	Difference Sensor 2			X
Difference SOP Status Diff 1 Diff 2 Diff 3	Read only	0 = INACTIVE 1 = OFF 2 = ON	 33531 33532 33533	Input register	differential_controller_(n)/status	Difference			X

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

Data value	Read/ Write	Format/displayed value	First Modbus Adresse	Modbus Function-Code	MQTT-Topic /<prefix>/	Homeassistant Name	Available		
							heatapp! base	heatapp! base	heatcon! EC
Diff 4 Diff 5 Diff 6 Diff 7 Diff 8 Diff 9 Diff 10 Diff 11 Diff 12 Diff 13 Diff 14 Diff 15			33534 33535 33536 33537 33538 33539 33540 33541 33542 33543 33544 33545						
Difference Thermal output Diff 1 Diff 2 Diff 3 Diff 4 Diff 5 Diff 6 Diff 7 Diff 8 Diff 9 Diff 10 Diff 11 Diff 12 Diff 13 Diff 14 Diff 15	Read only		33546 33547 33548 33549 33550 33551 33552 33553 33554 33555 33556 33557 33558 33559 33560	Input register	differential_controller_(m)/heat_output	Difference thermal output			X
Thermostat Actual temperature	Read only	Temperature in °C/°F	33700	Input register	thermostat/temperature	Thermostat temperature			X

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

Data value	Read/ Write	Format/displayed value	First Modbus Adresse	Modbus Function-Code	MQTT-Topic /<prefix>/	Homeassistant Name	Available		
							heatapp! base	heatapp! base	heatcon! EC
Thermostatus Status	Read only	0 = INACTIVE 1 = OFF 2 = ON	33701	Input register	thermostat/status	Thermostat status			X
Extras Info 1	Read only	Temperature in °C/°F	33702	Input register	extra/info_1	Extra information 1			X
Extras Info 2	Read only	Temperature in °C/°F	33703	Input register	extra/info_2	Extra information 2			X
Extras Info 3	Read only	Temperature in °C/°F	33704	Input register	extra/info_3	Extra information 3			X

*= This display is only available with heatapp! base when used in conjunction with an OpenTherm machine and depends on the values supplied by the machine.

2 Quick start and prerequisites

Quick start: which connection would you like to set up?

This guide helps you choose a connection and perform the initial connection test. Modbus TCP is suitable for direct access by a Modbus client to enabled registers. MQTT transfers values via an MQTT broker. Home Assistant can use the MQTT data and, when Home Assistant support is enabled, automatically discover devices and entities.

Objective	Required	First successful test
Modbus TCP	Device IP address, enabled register entry, Modbus client	Read an enabled register and compare the raw value with the register table.
MQTT	Device or broker IP address, topic prefix, appropriate credentials and, if required, TLS certificates	Connect to the broker and receive a known message.
Home Assistant	Home Assistant, a reachable MQTT broker, and MQTT and Home Assistant functions enabled on the device	View the device/entities in Home Assistant and compare a measured value with the device.

Checks before you begin

- The device is switched on and reachable over the network. Its IP address and network segment are known.
- The device/firmware version in use is supported by this version of the documentation: version 2.2.42898.

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

- For Modbus, the required values are enabled for access according to the register table.
- For MQTT, determine whether the device's local MQTT server or an external broker will be used.
- Firewall and network rules should allow only the connections required. Do not expose MQTT or Modbus services to the internet without protection.
- Initially, test changes to writable registers or MQTT commands only with an approved, harmless test value.

3 Modbus in heatapp! and heatcon! systems

When integrated into a Modbus system, the heatapp! / heatcon! system acts as the Modbus server (slave). Data points are queried using the TCP/IP protocol.
Modbus TCP/IP is an extension of the Modbus protocol for communication over Ethernet networks. It uses TCP to transmit data packets over IP networks, including LANs, WANs and the internet. This variant allows easier integration into IT networks.

3.1 Enabling the Modbus connection

Select the Remote Access menu. Enable the connection to the Modbus server and enter the network details of your Modbus master.

The Modbus master's network details define the network from which the heatapp! / heatcon! devices expect and respond to messages. For Modbus communication, the communication partner must be on the specified network.

NOTE:
Use the default Modbus port 502!

3.2 Procedure

1. Enable Modbus TCP on the heatcon! EC. Save the setting and note the device's IP address.
2. In the Modbus client, create a connection using the device IP address and port 502. Select Modbus TCP (not Modbus RTU/serial).
3. Select a value explicitly enabled in the register table. Use the register address, register type/function code, access mode (read/write), data type and scaling shown.
4. Initially, read just one value. Compare the raw value with the table and convert it using the scaling described there.
5. Only once reading works reliably should you test a write operation, if required. Use only a register marked as writable and an approved test value.
6. Record the result, including device version, client, address notation used and raw value.

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

3.3 Reading and writing data points

Data points are accessed through input and holding registers. The address range is 30001 to 49999. All input registers are read-only. Holding registers can be read and written.

The following outputs can be displayed:

Data format	Datea type	Value	Function
Sensor	Signed short	-32768	No sensor
		-32767	Sensor open circuit
		-32766	Sensor short circuit
		-32758	Sensor digital status OFF
		-32757	Sensor digital status ON
		-500 ... 5000	Temperature value -50°C ... 500.0°C
Temperatur	Signed short	-32767	Sensor open circuit as temperature value
		-32766	Sensor short circuit as temperature value
		-32765	--.-°C
		-32764	Sensor not yet ready as temperature value
		-32763	Type error
		-32762	Modem Automatic (SHORT CIRCUIT)
		-32761	Modem Automatik (INTERRUPTION)
		-32760	Modem Automatik (MEASUREMENT VALUE KTY 65,0°C)
		-32758	Digital value 0
		-32757	Digital value 1
		-32756	Special value: initiate shutdown
		-32755	Shutdown detection (setpoint rising)
		-32754	Shutdown detection (setpoint returning)
		-32753	Validity limit for sensor values
		-32752 ... 32767	Temperature value -3275.2 ... 3276.7°C
Lockout	(Not connected anywhere)		
Warning message	(Not connected anywhere)		
Digital	Unsigned short	0	OFF
		1	ON
		2 ... 65535	undefined

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

All room information values are specified in steps of 100. If many rooms have been configured in your heatcon! system, queries may be delayed. In this case, we recommend specifying the Modbus addresses as 1:1 reference addresses.

Temperature values are output by the Modbus module as register values.

Example:
Register value 215 → 21.5 °C / depending on the unit configured

3.4 Invalid queries

If a value is requested that has not been enabled for Modbus communication, the value 65535 is returned.

4 MQTT in heatapp! and heatcon! Systems

The abbreviation MQTT originally stands for Message Queuing Telemetry Transport. It is a lightweight communication protocol developed specifically for wireless sensor networks. For this reason, it is frequently used in automation technology, industrial communication and, not least, the Internet of Things (IoT). This enables devices that were originally independent of one another to communicate directly with one another.

The MQTT architecture consists of a server, also known as a broker, one or more clients and a network. The broker is the central intermediary that facilitates communication between the clients. It is responsible for receiving, storing and sending messages to the clients.

The clients are the end devices that communicate with the broker. They can send messages to the broker and receive messages from the broker. Such a message is also known as an MQTT message.

The network provides the connection between the broker and the clients. This can be either a local network or the internet.

There are various ways to enable data exchange via MQTT:

Enable data exchange via	• **Off** • Local Server • ExternalServer
Encryption	• **No** • Yes

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

Authentication method	• none • Password • Certificat
MQTT Topic Prefix	• **None** • To be entered individually •
Homeassistant	• **No** • Yes

4.1 Procedure

1. Choose a local server or an external server/bridge. Note the broker address, port and topic prefix.
2. Enable MQTT on the device and select the appropriate server type.
3. If password authentication is used, enter the MQTT broker username and password. These credentials are not necessarily the same as the device interface login details.
4. If TLS/encryption is enabled, ensure the port, encryption and certificates match on the broker and device. This document specifies port 1883 for unencrypted connections and 8883 for encrypted connections; check the actual broker configuration.
5. Save the configuration. Then use an MQTT client to check whether a connection to the broker can be established.
6. First subscribe to the configured prefix or the topics documented for the test. If supported by your device version, request publication of all available values via /<prefix>/update_all.
7. Compare the topic and payload with the examples or topic table in this document. Record the message actually received.

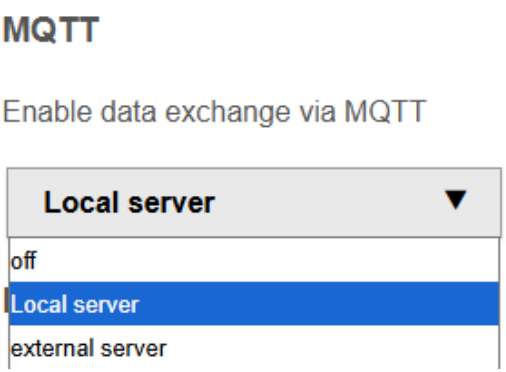
4.2 Security

1. Where possible, use authentication and TLS if supported by the selected configuration.
2. Use unique, sufficiently strong broker credentials and do not disclose them in screenshots or publicly accessible examples.
3. Restrict network access to the required clients and ports. Do not expose the broker directly to the internet.
4. Before write or command operations, check topic permissions and the possible effects on heating control.

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

4.3 Allowing MQTT data exchange



First select how you want to allow data exchange via MQTT.

4.3.1 MQTT off

When switched off, the device does not allow external access. Ports 1883 and 8883 are closed, and no messages are sent.

4.3.2 MQTT using a local server

Selecting the local server allows data exchange from the local network. This means that the server runs on the heatcon; no additional broker is required. The heatcon! listens for messages on address 0.0.0.0.
Port 1883 is used when encryption is disabled.
Port 8883 is used when encryption is enabled.

NOTE:
Im Homeassistsant wird die Integration MQTT hinzugefügt und die Auswahl „die MQTT-Broker-Verbindungsdetails manuell eingeben“ getroffen. Im folgenden werden IP-Adresse und Port vom heatcon! im Homeassistanten eingegeben.

4.3.3 MQTT using an external server (bridge)

First enter the address and port of your external server. Data exchange takes place exclusively with the specified broker, which generates the topics.

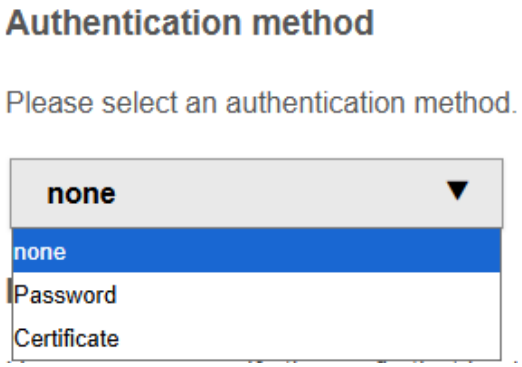
EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach
Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

For example, the MQTT broker can be enabled as an integration in Home Assistant. The credentials are created in the MQTT broker configuration.
Only after the broker is active should MQTT via an external server be enabled on the heatcon! Select “Password” as the authentication method and enter the credentials created in the broker.

4.4 Authentication method

Choose between the following authentication methods:

- None
- Password
- Certificate



NOTE:
Please ensure that you enter the correct port number in the broker.
Encrypted data exchange = Port 8883
Unencrypted data exchange = Port 1883

NOTE:
The MQTT broker’s login details are separate from those of the heatcon! EC and should not be confused with them. It is not necessary to create users in the heatcon! EC using the MQTT broker’s login details.

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach
Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

4.4.1 No authentication

If authentication is selected for the ‘KONE’ access method, no further settings are required. The MQTT master can listen to the specified topic and write the relevant values.

4.4.2 Password

For the ‘PASSWORD’ access method, a user name and password must be created and saved in heatcon! EC.

4.4.3 Certificate

NOTE:
The option ‘Authentication using a certificate’ is only available if encryption is enabled. Without encryption, the only options are ‘No authentication’ or ‘Authentication using a password’.

For certificate-based authentication, the certificates are generated by the heatcon! EC on the local network. These certificates are stored in the heatcon! EC. Clicking the ‘Export as file’ button exports all certificates individually as text files and saves them to your PC. Make sure you note the save location so that you can subsequently integrate the files into your MQTT broker.

NOTE:
Importing and saving externally generated certificates in PEM format is only possible if you are running the MQTT Master via an external server (bridge). When using a local server, only certificates generated by heatcon! EC can be used.

4.4.4 Certificate validity

he certificates are valid for 10 years. The expiry date is shown above each certificate.

4.5 MQTT topic prefix

Enter the prefix here that will be appended to all topics. The prefix allows you to structure your MQTT topics, making them easier to manage.
The prefix is appended to the topics and should be unique for every heatapp!/heatcon! system using the same broker. The existing topic table lists, amongst others, /<prefix>/update_all as a request to publish available values, as well as /<prefix>/boiler/status and /<prefix>/boiler/operating_mode as example topics.

Beispiel für die Structure (replace placeholders):
Prefix: haus_01
Request topic: /haus_01/update_all
Example topic for status: /haus_01/boiler/status
Example topic for operating mode: /haus_01/boiler/operating_mode

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach
Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

NOTE:
This example illustrates the topic structure; it does not represent a guaranteed payload or a guarantee that every topic will be present in every configuration. The payload format, publication conditions and write/command topics must be verified against the published topic table and firmware.

4.5.1 Structure of MQTT topics

Depending on the configuration of the heatapp! / heatcon! Systems, different values are transmitted.

MQTT Specification for heatapp! / heatcon! Systems

Topic Structure

The MQTT topics used by heatapp! / heatcon! systems begin with a prefix that can be customised in the system configuration. The prefix can be any value, but it must be unique for each heatapp! / heatcon! system connected to the same broker.

Special topic used to actively request all values, for example immediately after setting up the client.

Topic	Description	Published by
/<prefix>/update_all	Requests publication of all available values	Client

The topics are structured as follows:

Topic	Description	Read / write	Published by
/<prefix>/<component>/temperature/state	Current temperature	Read value	heatapp! / heatcon!
/<prefix>/<component>/setpoint/state	Current setpoint	Read value	heatapp! / heatcon!
/<prefix>/<component>/setpoint/set	New setpoint (write)	Write value	Client
/<prefix>/<component>/setpoint/mode/	Setpoint operating mode, usually “Auto”	Read value	heatapp! / heatcon!

Examples:

1. Writable values
   Topic: <prefix>/zone_1/setpoint/set Payload: 21.5
   Topic: <prefix>/zone_1/setpoint/state Payload: 21.5
2. Readable values
   Topic: <prefix>/zone_1/temperature Payload: 20.0

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

5 Home Assistant with heatapp! / heatcon! systems

The heatapp! / heatcon! system can be added to Home Assistant using MQTT.
Enable Home Assistant support in the System Management menu.

5.1 Home Assistant setup example

5.2 Preparing heatapp!/heatcon! for Home Assistant

- Select Remote Access
- Enable MQTT
- Enable Home Assistant

5.3 Preparing Home Assistant

Add the MQTT integration in Home Assistant. Depending on the preferred setup, either use the official Mosquitto MQTT broker add-on (select the external server in heatcon!) or enter the MQTT broker connection details manually (enable the local server in heatcon!).

5.4 Home Assistant – setup

Home Assistant uses MQTT to communicate with the heatapp! / heatcon! system. To set it up, the broker must be reachable, MQTT must be enabled on the device, and Home Assistant support must be switched on on the device. The exact menu names may vary depending on the device, firmware and Home Assistant versions.

5.4.1 Option A: Broker in the heatcon! EC

1. Open the device's MQTT settings and select the local server.
2. Open the advanced settings, enter a unique topic prefix and enable Home Assistant.
3. Save the settings.
4. Add the MQTT integration in Home Assistant and use the local broker's connection details. Enter the device's IP address and any other details required by the device configuration.
5. Check in Home Assistant that the device is detected and the expected entities are created.

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

Local server example:

1. On the heatcon! EC, select MQTT → Local server.
   - Select Further settings.
   - Set the topic.
   - Set Home Assistant to Yes.
   - Save.
2. In Home Assistant, go to Settings → Add-ons and enter the MQTT broker connection details manually.
   - Enter the heatcon! EC's IP address.
   - Complete the fields according to the settings on the heatcon! EC.
   - Save.
3. Check in Home Assistant that the heatcon! EC has been detected correctly.

5.4.2 Option B: External broker

1. Set up the external MQTT broker and create a dedicated user for the device.
2. Add the MQTT integration in Home Assistant, or check that it is connected to the external broker.
3. Under MQTT on the device, enter the external broker's address and port, along with the agreed authentication details. Enable Home Assistant and save the settings.
4. First check that the device is connected to the broker, then check automatic detection in Home Assistant.

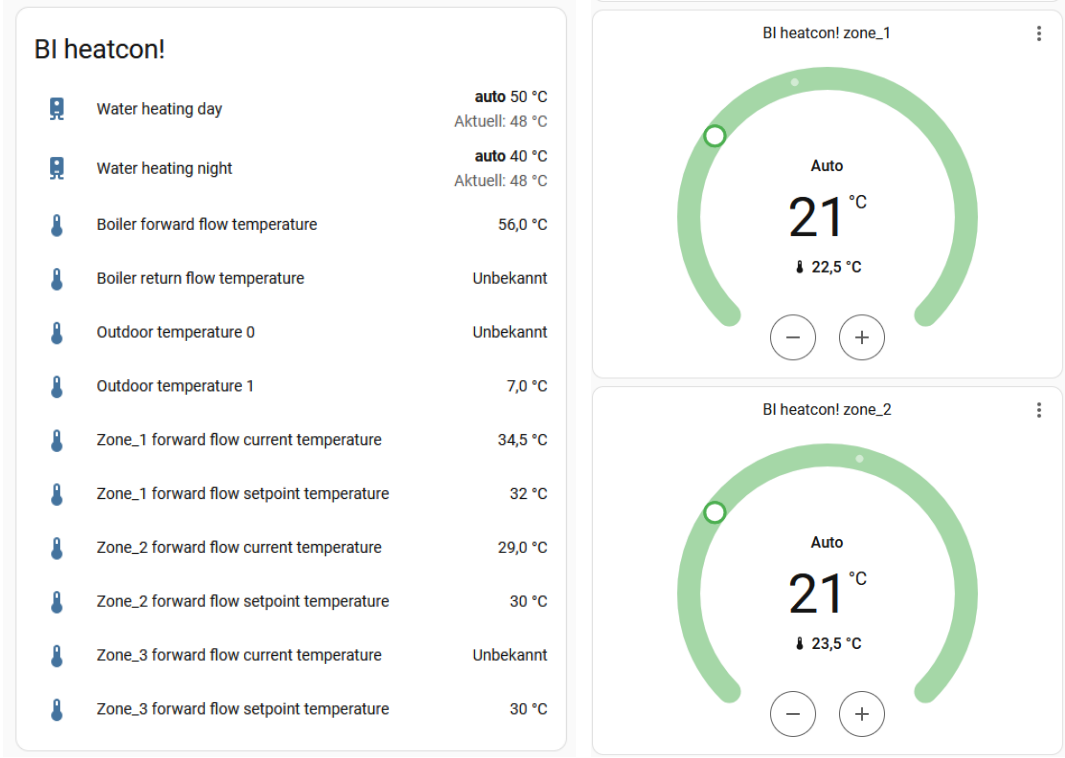
External server example:

1. In Home Assistant, go to Settings → Add-ons and install Mosquitto Broker.
2. Enable the MQTT integration.
3. Create an MQTT user.
4. On the heatcon!, go to System Management → Remote Access → MQTT:
   - MQTT: On
   - Server: ...
   - Port: 1883
   - Authentication: Password
   - Username: ...
   - Password: ...
   - Home Assistant: On
5. Save.
6. Check in Home Assistant that the heatcon! EC has been detected automatically as a device.

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

Once all settings have been configured, the heatapp! base / heatcon! EC will be detected automatically and displayed in the Home Assistant overview.



5.5 Acceptance test

- The device is visible in Home Assistant.
- At least one expected entity is displayed.
- Allowing for the unit and update interval, the displayed value matches the value shown in the device interface or MQTT test client.
- The connection is re-established after restarting the device or Home Assistant.
- If control functions are used, carry out only an authorised test, then check the resulting state in both Home Assistant and on the device.

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

6 Troubleshooting: symptom → check → action

Symptom	Check	Action
Modbus connection cannot be established	Check the IP address, network segment, whether Modbus is enabled, port 502 and the firewall.	Check reachability and port access on the local network, then try connecting again.
Modbus responds, but the value is implausible	Check the register type/function code, table address versus client offset, data type, scaling and unit.	Cross-check against a clearly readable register in the table and document the addressing convention.
Modbus returns 65535	Is the register enabled for Modbus? Is the address correct?	Check access permissions and the register address; do not interpret the invalid value as a measurement.
MQTT client cannot connect	Check the broker address, port, server type, username/password, TLS settings and certificate validity.	Compare the client and broker settings; check the broker logs.
Connection is established, but no topics appear	Check the topic prefix, subscription, permissions and publishing/request behaviour.	Test with a known topic; on supported device versions, use /<prefix>/update_all.
Home Assistant does not detect a device	Check the MQTT integration/broker connection, whether Home Assistant support is enabled, the prefix and the device version.	First verify MQTT messages using a separate client; then check the Home Assistant configuration and logs.
Values are missing or are not updating	Check whether the topic is being published, whether the payload is valid and whether the connection remains stable.	Check the topic and payload in the MQTT client and compare them with the documented topic table.

EbV Elektronikbau- und Vertriebs- GmbH, Heisterner Weg 8-12, 57299 Burbach

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.